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EXAMINER	
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ART UNIT	PAPER NUMBER
2609	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/806,601	IYER ET AL.	
	Examiner	Art Unit	
	Abdullah Riyami	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 15-19* is/are rejected.

7)☒ Claim(s) *14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2 and 4-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Aboba et al. (US 2004/0243846 A1).

In claim 1, Aboba et al. discloses a wireless network (see figure 2, block 200) adapted with a plurality of access points (see figure 2, blocks 202, 204, and 206) and a station (see figure 2, block 220), comprising: an interconnect (see figure 2, block 210 paragraph 38); and a wireless network switch (see figure 2, block 208 and paragraph 38) coupled to the interconnect for communications with the plurality of access points (see figure 2, blocks 202, 204, and 206 paragraph 38), the wireless network switch (see paragraph 30) to receive a DEAUTHENTICATION message (see deauthentication frame, paragraph 31) sent by one of the plurality of access points (see paragraph 57) in a coverage area (see figure 2, locations A, B, and C) of the station and to block communications (see paragraph 58-60) between the plurality of access points (see figure 2, blocks 202 and 204) and the station (see figure 2, location B) in

response to determining that the DEAUTHENTICATION message is invalid (see bogus management frames, paragraph 58 and 48).

In claim 2, Aboba et al. discloses a wireless network (see figure 2, block 200) adapted with a plurality of access points (see figure 2, blocks 202, 204, and 206) and a station (see figure 2, block 220), wherein the DEAUTHENTICATION message is invalid upon determination that the DEAUTHENTICATION message originated from a source (see authorized user, paragraph 58) other than the wireless network switch.

In claim 4, Aboba et al. discloses a wireless network (see figure 2, block 200) adapted with a plurality of access points (see figure 2, blocks 202, 204, and 206) and a station (see figure 2, block 220), wherein the wireless network switch blocks communications (see paragraph 58-60) between the plurality of access points and the station by signaling an access point currently associated with the station to disassociate and denying subsequent request messages from the station on behalf of the plurality of access points (see booted off the network, paragraph 18 and paragraph 45 and 49).

In claim 5, Aboba et al. discloses a wireless network (see figure 2, block 200) adapted with a plurality of access points (see figure 2, blocks 202, 204, and 206) and a station (see figure 2, block 220), wherein the request messages comprise any one of a PROBE REQUEST message, an ASSOCIATION REQUEST message and a REASSOCIATION REQUEST message (see paragraph 60).

Claim Rejections - 35 USC § 103

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 3, 6-13, and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aboba et al. (US 2004/0243846 A1) in view of Eran et al. (US 2004/0063455 A1).

In claim 3, Aboba et al. discloses a wireless network (see figure 2, block 200) adapted with a plurality of access points (see figure 2, blocks 202, 204, and 206) and a station (see figure 2, block 220), wherein the wireless network switch determines that the DEAUTHENTICATION message is invalid (see bogus management frames, paragraph 58).

Aboba et al. does not expressly disclose recovering a destination address of the DEAUTHENTICATION message and comparing the destination address with a list of destination addresses associated with valid DEAUTHENTICATION messages transmitted by the wireless network switch.

Eran et al. discloses recovering (see manager 30 (Switch) and ARP table (list of Destination MAC addresses), paragraph 59) a destination address (see paragraph 54, MAC address of access point) of the DEAUTHENTICATION message (see paragraph 18, management frame) and comparing (see manager 30 (Switch) and ARP table (list of Destination MAC addresses), the destination address (see paragraph 54, MAC address of access point) with a list of destination addresses (see manager 30 (Switch) and ARP table (list of Destination MAC addresses), associated (see manager 30 (Switch) and ARP table (list of Destination MAC addresses), with valid DEAUTHENTICATION

messages transmitted by the wireless network switch (see manager 30 (Switch) and ARP table (list of Destination MAC addresses).

Aboba et al. and Eran et al. are analogous art because they are from the same field of endeavor of transmitting and receiving management frames between access points, switches and stations in wireless networks.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Eran et al.'s ARP table that maintains a list of Destination MAC addresses in Aboba et al.'s WLAN switch.

The motivation to combine would have been to prevent spoofing impersonation and premature termination of communications between access points and stations from unauthorized stations. Hence, preventing network devices from being booted off of the network by false deauthentication requests.

In claim 6, Aboba et al. discloses a wireless network (see figure 2, block 200) adapted with a plurality of access points (see figure 2, blocks 202, 204, and 206) and a station (see figure 2, block 220), but does not expressly disclose denying subsequent request messages from the station for a prescribed period of time.

Eran et al. discloses denying subsequent request messages from the station for a prescribed period of time (see paragraph 50).

Aboba et al. and Eran et al. are analogous art because they are from the same field of endeavor of transmitting and receiving management frames between access points, switches and stations in wireless networks.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Eran et al.'s predetermined time period technique in Aboba et al.'s WLAN switch.

The motivation to combine would have been to prevent spoofing impersonation and premature termination of communications between access points and stations from unauthorized stations. Hence, preventing network devices from being booted off of the network by false deauthentication requests.

7. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eran et al. (US 2004/0063455 A1) in view of Smith et al. (US 2005/0059353).

In claim 7, Eran et al. a method for selectively associating with a station (see figure 1) transmitting a first PROBE REQUEST message (see paragraph 47) followed by a second PROBE REQUEST message (see paragraph 50) under control of a wireless network switch (see figure 1, block 30), comprising: receiving a received signal strength indicator (RSSI) value corresponding to signal strength of the first PROBE REQUEST (see paragraph 47) message detected by each access point (see paragraph 47 and 20).

Eran et al. does not expressly disclose receiving a message identifying that the second PROBE REQUEST message has been detected; and responding only to the second PROBE REQUEST message on behalf of an access point selected to associate with the station using at least the RSSI value.

Smith et al. discloses a method, wherein receiving a message identifying that the second PROBE REQUEST message has been detected (see figure 4, blocks

410 and 420); and responding only to the second PROBE REQUEST message (see figure 4, block 425) on behalf of an access point selected to associate with the station (see paragraph 10) using at least the RSSI value (paragraph 6, signal quality information).

Eran et al. and Smith et al. are analogous art because they are from the same field of endeavor of transmitting and receiving management frames between access points and stations in wireless networks.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Smith et al.'s Adaptive Probe Request Generator incorporated into an access point (see paragraph 21 and figure 1) in Eran et al.'s WLAN switch (see figure 1, block 30).

The motivation to combine would have been to have a WLAN switch that stores a time value correlating to the first probe request, parses the probe request, and store the source MAC address of the station transmitting the probe request and responding only to the second probe request of the same station from unauthorized stations. Hence, preventing network devices from being booted off of the network by false probe requests.

In claim 8, Eran et al. discloses a method, but does not expressly disclose the message is the second probe request message.

Smith et al. discloses a method, wherein the message is the second probe request message (see figure 4, block 420).

Eran et al. and Smith et al. are analogous art because they are from the same field of endeavor of transmitting and receiving management frames between access points and stations in wireless networks.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Smith et al.'s Adaptive Probe Request Generator incorporated into an access point (see paragraph 21 and figure 1) to receive the second probe request message in Eran et al.'s WLAN switch (see figure 1, block 30).

The motivation to combine would have been to have a WLAN switch that stores a time value correlating to the first probe request, parses the probe request, and store the source MAC address of the station transmitting the probe request and responding only to the second probe request of the same station from unauthorized stations. Hence, preventing network devices from being booted off of the network by false probe requests.

In claim 9, Eran et al. teaches of a method, wherein prior to receiving the RSSI value, the method further comprises: generating the RSSI value of the first PROBE REQUEST message (see paragraph 47 and figures 2Aand 2B); loading the RSSI value into a field of the first PROBE REQUEST message to produce a modified PROBE REQUEST message (see paragraph 47); and disassociate and denying subsequent request messages (see figure 2A, step 44 (no further requests till step 44 is completed)) from the station on behalf of the plurality of access points (see figure 2A, blocks 42 (AP1 and AP2)).

In claim 10, Eran et al. teaches of a method, wherein prior to receiving the message, the method further comprises receiving load parameters from each access point detecting the first PROBE REQUEST message placing the load into a field of the modified PROBE REQUEST message (see paragraph 48, load balancing and paragraphs 58 and 59).

In claim 11, Eran et al. teaches of a method, wherein prior to receiving the RSSI value, the method further comprises: generating the RSSI value of the first PROBE REQUEST message by each access point; inserting the RSSI value into a first field of the first PROBE REQUEST message to produce a modified PROBE REQUEST message (see paragraph 47 and figures 2Aand 2B); computing a load by each access point detecting the first PROBE REQUEST message; inserting a load parameter (see paragraph 48, load balancing and paragraphs 58 and 59) into a second field of the modified PROBE REQUEST message; and transferring the modified PROBE REQUEST message to the wireless network switch.

In claim 12, Eran et al. teaches of a method, wherein the access point being selected is based on the load parameter (see paragraph 48, load balancing and paragraphs 58 and 59) and the RSSI value (see paragraph 48).

8. Claims 13-17 are rejected under 35 U.S.C. 103 as being unpatentable over Eran et al. (US 2004/0063455 A1) in view of Chellali et al. (5878119).

In claim 13, Eran et al. teaches of a method comprising: computing a RSSI value for a management message by a plurality of access points detecting the

management message, the management message originating from a station (see paragraphs 48-59).

Eran et al. does not expressly disclose setting a plurality of received signal strength indicator (RSSI) thresholds including a first RSSI threshold and a second RSSI threshold having a value lower than the first RSSI threshold; and placing an address of the station into a list identifying stations located in a potential coverage hole if none of the plurality of access points computes a RSSI value of the management message above the second RSSI threshold.

Chellali et al. discloses a method comprising, setting a plurality of received signal strength indicator (RSSI) thresholds including a first RSSI threshold and a second RSSI threshold having a value lower than the first RSSI threshold (see column 3, lines 40-64 and figure 3); and placing an address of the station into a list identifying stations located in a potential coverage hole if none of the plurality of access points computes a RSSI value of the management message above the second RSSI threshold (see column 4, table 1, data and idle).

Eran et al. and Chellali et al. are analogous art because they are from the same field of endeavor of transmitting and receiving management frames and measuring and recording their signal strengths.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Chellali et al.'s technique for of having thresholds to calculate signal strengths (see column 3, lines 40-64) and keeping a record in a table when the signal is above or equal to set threshold and below threshold (see

column 4, table 1, data and idle) in Eran et al. switch (figure 1, manager 30) and table (see paragraph 59).

The motivation to combine would have been to have an overall savings in bandwidth resulting from setting threshold levels for the signals received from mobile stations via access points, whereby signals above the threshold are allowed to pass through while signal levels below threshold are not, resulting in more efficient network bandwidth utilization.

In claim 15, Eran et al. teaches of a method, computing a RSSI value for a management message by a plurality of access points detecting the management message, the management message originating from a station (see paragraphs 48-59), but does not expressly disclose the first RSSI threshold is greater than or equal to 20 dbm0 and the second RSSI threshold is less than 20 dbm0.

Chellali et al. discloses a method wherein the first RSSI threshold is greater than or equal to 20 dbm0 and the second RSSI threshold is less than 20 dbm0 (see figure 3, signal level can be within any range as specified by wireless communication standards).

Eran et al. and Chellali et al. are analogous art because they are from the same field of endeavor of transmitting and receiving management frames and measuring and recording their signal strengths.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Chellali et al.'s technique for of having thresholds to calculate signal strengths (see column 3, lines 40-64) and keeping a record in a

table when the signal is above or equal to set threshold and below threshold (see column 4, table 1, data and idle) in Eran et al. switch (figure 1, manager 30) and table (see paragraph 59).

The motivation to combine would have been to have an overall savings in bandwidth resulting from setting threshold levels for the signals received from mobile stations via access points, whereby signals above the threshold are allowed to pass through while signal levels below threshold are not, resulting in more efficient network bandwidth utilization.

In claims 16 and 17, Eran et al. teaches of a method, computing a RSSI value for a management message by a plurality of access points detecting the management message, the management message originating from a station (see paragraphs 48-59), where the station fails to complete association with any of the plurality of access points (see paragraph 48), and where the station continues to provide management messages with RSSI values below the second RSSI threshold (see paragraph 48), but does not expressly disclose initiating an event to mitigate a coverage hole.

Chellali et al. discloses a method of initiating an event to mitigate a coverage hole (see column 4, table 1, idle).

Eran et al. and Chellali et al. are analogous art because they are from the same field of endeavor of transmitting and receiving management frames and measuring and recording their signal strengths.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Chellali et al.'s technique for of having thresholds to calculate signal strengths (see column 3, lines 40-64) and keeping a record in a table when the signal is above or equal to set threshold and below threshold (see column 4, table 1, data and idle) in Eran et al. switch (figure 1, manager 30) and table (see paragraph 59).

For claims 16-17, the motivation to combine would have been to have an overall savings in bandwidth resulting from setting threshold levels for the signals received from mobile stations via access points, whereby signals above the threshold are allowed to pass through while signal levels below threshold are not, resulting in more efficient network bandwidth utilization.

8. Claims 18 and 19 are rejected under 35 U.S.C 103 as being unpatentable over Eran et al. (US 2004/0063455 A1) in view of Son et al. (US 2004/0185852 A1).

In claim 18, Eran et al. discloses a method comprising: receiving a probe request message (see figure 2A) by a plurality of access points (see figure 1, block 22), the probe request message being sent from a station (see figure 1, block 24); forwarding the probe request message from each of the plurality of access points (see paragraphs 47 and 48), creating a list including media access control (MAC) address of the plurality of access points, and providing the list to the station originally initiating the probe request message at completion of an association

phase between the station and one of the plurality of access points (see paragraphs 56 and 59 (table)).

Eran et al. does not expressly disclose each probe request message on different channels, including a channel number and media access control (MAC) address of an access point forwarding the probe request message.

Son et al. discloses each probe request message on different channels (see abstract, plurality of sub-carrier frequency bands), including a channel number and media access control (MAC) address of an access point forwarding the probe request message (see tables 1 and 2, and paragraph 12).

Eran et al. and Son et al. are analogous art because they are from the same field of endeavor of transmitting and receiving management frames between access points and stations in wireless networks.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use Son et al.'s probe request message having the channel number (see tables 1 and 2, and paragraph 12) in Eran et al. probe request message for wireless communications for handovers or finding the best access points in a coverage area.

The motivation to combine would have been to have a method for broadband wireless communications where signals (probe management messages) for each access points can be measured and decision can be made according to the highest signal strength of the access point for a coverage area; and also for handovers.

In claim 19, Eran et al. discloses a method wherein the forwarding of the probe request message is to a wireless network switch coupled to each of the plurality of access points over an interconnect (see paragraphs 47 and 48 and figure 1).

Allowable Subject Matter

9. Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
A	US-2001/0018346 A1	08-2001	Okajima et al.	455/437
B	US-2002/0181418 A1	12-2002	Awater et al.	370/329
C	US-6,697,337 B1	02-2004	Cafarelli et al.	370/253
D	US-2007/0025486 A1	02-2007	Gainey et al.	375/356
E	US-7,113,498 B2	09-2006	Bajic, Zeljko	370/338
F	US-2006/0116170 A1	06-2006	Brahmbhatt et al.	455/560
G	US-2006/0111103 A1	05-2006	Jeong et al.	455/434
H	US-2005/0086465 A1	04-2005	Sapkota et al.	713/150
I	US-2005/0075142 A1	04-2005	Hoffmann et al.	455/562.1
J	US-2005/0135270 A1	06-2005	Larsen et al.	370/254
K	US-2005/0119001 A1	06-2005	Watanabe, Koji	455/436
L	US-2005/0128990 A1	06-2005	Eom et al.	370/338
M	US-2005/0128988 A1	06-2005	Simpson et al.	370/338

	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
N	US-2005/0207448 A1	09-2005	Iyer et al.	370/476
O	US-2005/0227623 A1	10-2005	Su et al.	455/062
P	US-2005/0245237 A1	11-2005	Adachi et al.	455/411

All of the above are cited to show a system and method for a centralized station management.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdullah Riyami whose telephone number is (571) 270-3119. The examiner can normally be reached on Monday through Thursday 8am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton can be reached on (571) 272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AR

DANG T. TON
SUPERVISORY PATENT EXAMINER